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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,186	06/20/2003	Masud Beroz	TESSERA 3.0-297	8841

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EXAMINER	
IM, JUNGHWA M	

ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,186	BEROZ, MASUD	
	Examiner	Art Unit	
	Junghwa M. Im	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *16-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of claims 1-15 in the reply filed on September 3, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-5 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 5 recite a limitation of having the internal components electrically connected to the contacts on the front surface. Fig. 1 of the instant invention shows that the contact is inside the semiconductor body. Furthermore, note that the contact merely indicates an electrical connection point for the internal component.

Claims 4 and 10 recite a limitation of "said body has edges bounding said front and rear surfaces and said traces include bonding points disposed in the vicinity of said edges." This is confusing. In particular, Fig. 2 of the instant invention shows that the bonding point [26] and the traces [24] are the same regions and they are disposed all over the back of the semiconductor surface.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Wenzel et al. (US 6150724), hereinafter Wenzel.

Regarding claim 1, insofar as understood, Fig. 8 of Wenzel shows a semiconductor chip [102] having a body [102a, 102b] with oppositely directed front and rear surfaces, contacts on said front surface and internal components within said body electrically connected to said contacts on said front surface, said chip also having pads on said rear surface [108 or 212 in Fig. 13] electrically isolated from said internal components and traces [208 in Fig. 13] on said rear surface electrically connected to said pads.

Regarding claim 2, Fig. 8 of Wenzel shows internal components include active devices [134; col. 9, lines 49-51].

Regarding claim 3, Wenzel discloses said internal components consist only of passive devices [col. 18, lines 49-50].

Regarding claim 4, insofar as understood, it is inherent that the back of the semiconductor device [102] in Fig. 14 of Wenzel shows that said body has edges bounding said front and rear surfaces and said traces include bonding points disposed in the vicinity of said edges.

Regarding claim 5, insofar as understood, Fig. 8 of Wenzel shows a chip assembly comprising;

(a) a first semiconductor chip [104] including a first body [104a, 104b] with oppositely-directed front and rear surfaces, said first semiconductor chip having internal components within said first body, contacts on the front surface connected to said internal components, said first semiconductor chip also having pads [312 in Fig. 14] on the rear surface of said first body and traces [310 in Fig. 14] extending from said pads along the rear surface of the first body;

(b) a second semiconductor chip [102] including a second body [102a, 102b] with oppositely-directed front and rear surfaces, said second semiconductor chip having internal components within the second body and contacts on the front surface of the second semiconductor chip,

said second semiconductor chip being mounted on said first semiconductor chip so that said second semiconductor chip overlies said rear surface of said first semiconductor chip, said contacts of said second semiconductor chip being electrically connected to said pads of said first semiconductor chip.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wenzel in view of Akram et al. (US 6313522), hereinafter Akram.

Regarding claim 6, Fig. 8 of Wenzel shows the most aspect of the instant invention except "said front surface of said second semiconductor chip confronts said rear surface of said first semiconductor chip." Fig. 5 of Akram shows a configuration of the stacked chips wherein said front surface [22A] of said second semiconductor chip [22] confronts said rear surface [20B] of said first semiconductor chip [20].

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Akram into the device of Wenzel in order to have said front surface of said second semiconductor chip confronted said rear surface of said first semiconductor chip to accommodate the design specification.

Regarding claim 7, Fig. 2 of Akram shows said contacts of said second semiconductor chip are bonded to said pads of said first semiconductor chip by masses of electrically conductive bonding material.

Regarding claim 8, Fig. 5 of Akram shows a substrate [12], said chips being mounted on said substrate with said front surface of said first semiconductor chip facing toward said substrate, said contacts of said first semiconductor chip being electrically connected to said substrate, said traces of said first semiconductor chip also being electrically connected to said substrate so that said contacts of said second semiconductor chip are connected to said substrate through said pads and traces of said first semiconductor chip [through metal layers 114, 116, 120].

Regarding claim 9, Fig. 2 of Akram shows bonding wires extending between said traces and said substrate, said traces being electrically connected to said substrate [12] through said bonding wires.

Regarding claim 10, insofar as understood, the back surface of the semiconductor shown in Fig. 2 of Akram shows said first semiconductor chip has edges bounding said front and rear surfaces of said first body, and wherein said bonding wires are connected to said traces adjacent said edges.

Regarding claim 11, Fig. 2 of Akram shows said contacts of said first semiconductor chip are connected to said substrate by masses of bonding material disposed between said contacts of said first semiconductor chip and said substrate.

Regarding claim 12, Akram discloses said contacts of said first semiconductor chip are connected said substrate by leads extending between said contacts of said first semiconductor chip and said substrate [col. 1, line 42-45].

Regarding claim 13, Fig. 8 of Wenzel shows said substrate is a package substrate adapted for mounting on a circuit panel.

Regarding claim 15, Fig. 2 of Akram shows said second semiconductor chip has pads and traces on the rear surface of said second body, the traces of said second semiconductor chip being electrically connected to said substrate, the assembly further comprising a third semiconductor chip [24] overlying said rear surface [22B] of said second semiconductor chip [22] and electrically connected to said pads of said second semiconductor chip.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wenzel and Akram as applied to claim 13 above, and further in view of Distefano (US 6309915).

Regarding claim 14, the combined teachings of Wenzel and Akram show the substantially the entire claimed structure except "wherein said substrate has terminals adapted for connection to a circuit panel, said terminals being movable with respect to said first semiconductor chip." Distefano discloses a movable terminal movable with respect to the chip [col. 4, lines 11-18].

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Akram into the device of Wenzel in order to have the substrate with terminals adapted for connection to a circuit panel, said terminals being movable with respect to said first semiconductor chip to facilitate testing and assembly.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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